

CLAIMS

1. A transfer tool used when a transferring object is transferred on a transferred object such as a paper comprising:

a transfer tool main unit having at least a transfer head capable of bringing the transferring object into contact with the transferred object, the transfer head having a transfer face which comes into contact with the transferred object and on which the transferring object is transferred at the transfer of the transferring object on the transferred object, wherein in a normal use state, the transferring object is transferred on the transferred object by bringing the transfer face into contact with the transferred object and moving the transfer face in a predetermined transfer direction,

the transfer tool including a feeding mechanism for feeding the transferring object to the transferred object by a certain dimension through the transfer face in the state where the transfer face is stopped and pressed with respect to the transferred object and a switching mechanism for selectively switching between a feeding state by the action of the feeding mechanism and the normal use state where the feeding state is released in the state where the transfer face is in contact with the transferred object.

2. A transfer tool as state in claim 1, wherein the transfer head has a transfer roller with the transfer face capable of

rotating at the transfer.

3. A transfer tool as state in claim 2, wherein the feeding mechanism can feed the transferring object to the transferred object by the certain dimension by rotating the transfer roller by a certain angle due to an external force.

4. A transfer tool as state in claim 3, wherein the switching mechanism switches between the feeding state where the transfer roller can be rotated by the certain angle depending the feeding mechanism and the normal use state where the transfer roller can rotate without depending on the feeding mechanism.

5. A transfer tool as state in claim 1, 2, 3 or 4 wherein in the state where a transferred face of the transferred object is brought into contact with the transfer face of the transfer head at the transfer, a rotatable auxiliary roller having a backing face which comes into contact with a back face of the transferred face of the transferred object is provided.

6. A transfer tool as state in claim 5, wherein the auxiliary roller is provided at a position opposed to the transfer face of the transfer head.

7. A transfer tool as state in claim 5 or 6, wherein the

backing face of the auxiliary roller is located as opposed to the transfer face, thereby relatively separating the backing face from the transfer face.

8. A transfer tool as state in claim 5, 6 or 7, wherein by rotating the auxiliary roller by the certain angle due to the external force and thus moving the transferred object by the certain dimension in a counter-transfer direction reverse to the transfer direction, the transferring object is drawn from the transfer face of the transfer head, resulting in that the feeding mechanism can feed the transferring object to the transferred object by the certain dimension.

9. A transfer tool as state in claim 8, wherein the switching mechanism switches between the feeding state where the auxiliary roller can be rotated by the certain angle depending the feeding mechanism and the normal use state where the auxiliary roller can rotate without depending on the feeding mechanism.

10. A transfer tool as state in claim 5, 6, 7, 8 or 9 further comprising a transferred object supporter capable of contacting against the transferred object from the back face corresponding to the area which is in contact with the transfer face of the transferred object in the state where the transfer face is brought into contact with the transferred object, wherein

an inserting space into which the transferred object can be inserted is formed between the transferred object supporter and the transfer tool main unit, and

the transfer head is disposed in the inserting space so that at least the transfer face is exposed from the transfer tool main unit and the auxiliary roller is disposed so that the backing face is exposed from the transferred object supporter.

11. A transfer tool as state in claim 10, wherein by rotating the auxiliary roller by a certain angle due to the external force and thus moving the transferred object by the certain dimension in a counter-transfer direction reverse to the transfer direction, the transferring object is drawn from the transfer face of the transfer head, resulting in that the feeding mechanism can feed the transferring object to the transferred object by the certain dimension, and

at least the auxiliary roller and an operating part capable of rotating the auxiliary roller by a certain angle due to an external force are provided and the operating part is formed at the transferred object supporter.

12. A transfer tool as state in claim 11, wherein the switching mechanism switches between the feeding state where the auxiliary roller can be rotated by the certain angle by the operating part and the normal use state where the auxiliary roller

can rotate without depending on the operating part.

13. A transfer tool as state in claim 11 or 12, wherein the auxiliary roller has an auxiliary roller main unit capable of contacting against the transferred object and a pinion rotating together with the auxiliary roller main unit, and the operating part rotates the pinion by the certain angle, thereby rotating the auxiliary roller by the certain angle.

14. A transfer tool as state in claim 13, wherein the operating part has an operating lever operably attached to the transferred object supporter and a floating engaging member capable of engaging with the pinion following the operation of the operating lever,

a rack part engaged with the pinion, which is capable of rotating the backing face of the auxiliary roller in the counter-transfer direction is formed at the floating engaging member, and

the floating engaging member is configured so as to be capable of taking an engaging attitude in which the rack part engages with the pinion and a retreating attitude in which the rack part is separated from the pinion.

15. A transfer tool as state in claim 14, wherein the operating lever is rotatably and pivotally attached to the

transferred object supporter at one end thereof and supports the floating engaging member at the other end thereof, and a moving direction of the other end and the floating engaging member around one end of the operating lever substantially corresponds to a tangent line direction of the pinion.

16. A transfer tool as state in claim 14 or 15, wherein the switching mechanism switches between a feeding state where the floating engaging member takes the engaging attitude and a normal use state where the floating engaging member takes the retreating attitude.

17. A transfer tool as state in claim 14, 15 or 16, wherein the operating lever is rotatably and pivotally attached to the transferred object supporter at one end thereof and supports the floating engaging member at the other end thereof, and the switching mechanism is configured such that the floating engaging member takes the engaging attitude when the operating lever is rotated in a predetermined operating direction so that the pinion rotates the backing face of the auxiliary roller in the counter-transfer direction and the floating engaging member takes the retreating attitude when the operating lever is rotated in a direction reverse to the operating direction.

18. A transfer tool as state in claim 14, 15, 16 or 17, wherein the operating lever is rotatably and pivotally attached to the transferred object supporter at one end thereof and supports the floating engaging member at the other end thereof,

a supporting shaft supporting the floating engaging member is provided at the other end of the operating lever, an attitude switching hole supported by the supporting shaft is formed at the floating engaging member, an engaging position is set at one end of the attitude switching hole as a long hole and a retreating position is set at the other end of the attitude switching hole,

the switching mechanism is configured such that the floating engaging member takes the engaging attitude by locating the supporting shaft at the engaging position in the attitude switching hole when the operating lever is rotated in a predetermined operating direction so that the pinion rotates the backing face of the auxiliary roller in the counter-transfer direction, and

the floating engaging member takes the retreating attitude by locating the supporting shaft at the retreating position in the attitude switching hole when the operating lever is rotated in a direction reverse to the operating direction.

19. A transfer tool as state in claim 14, wherein when

the operating lever is rotated in a predetermined operating direction so that the pinion rotates the backing face of the auxiliary roller in the counter-transfer direction, an elastic deforming part for accumulating a force rotating the operating lever in a direction reverse to the operating direction due to elastic deformation is formed at the operating lever.

20. A transfer tool as state in claim 14, 15, 16, 17 or 19, wherein the operating lever is rotatably and pivotally attached to the transferred object supporter at one end thereof and supports the floating engaging member at the other end thereof,

an attitude switching hole supporting the floating engaging member is formed at the other end of the operating lever, a supporting shaft is provided at the floating engaging member, an engaging position is set at one end of the attitude switching hole as a long hole and a retreating position is set at the other end of the attitude switching hole,

the switching mechanism is configured such that the floating engaging member takes the engaging attitude by locating the supporting shaft at the engaging position in the attitude switching hole when the operating lever is rotated in a predetermined operating direction so that the pinion rotates the backing face of the auxiliary roller in the counter-transfer direction, and the floating engaging member takes the retreating

attitude by locating the supporting shaft at the retreating position in the attitude switching hole in the normal use state, when the rack part comes into contact with the pinion and the floating engaging member repulses due to the rotation of the pinion with the rotation of the auxiliary roller caused by moving the transferred object in the counter-transfer direction.

21. A transfer tool as state in claim 14, 15, 16, 17, 18, 19 or 20, wherein an elastic deforming part for accumulating a force of moving the supporting shaft to the engaging position therein is formed at the floating engaging member when the supporting shaft is located at the retreating position in the attitude switching hole.

22. A transfer tool as state in claim 14, 15, 16, 17, 18, 19, 20 or 21, wherein a plurality of transmitting teeth each having a transmitting face facing a direction of rotating the pinion and an inclined face connecting between the transmitting faces are formed at the rack part and a plurality of engaging teeth each having an engaging face capable of engaging the pinion with the transmitting face are formed,

the feeding mechanism is configured so that when the transmitting tooth of the rack part operates in the direction in which the transmitting face of the transmitting tooth comes into contact with the engaging face of the engaging tooth in

the feeding state where the floating engaging member takes the engaging attitude, the pinion rotates in conjunction with the rack part with the floating engaging member being taking the engaging attitude, and

the switching mechanism is configured so that when the engaging tooth of the pinion moves and the front end of the engaging tooth comes into contact with the inclined face of the transmitting tooth in the feeding state, the rack part is separated from the pinion and the floating engaging member switches from the engaging attitude to the retreating attitude, thereby switching to the normal use state where the pinion runs idle relative to the rack part.

23. A transfer tool as state in claim 13, 14, 15, 16, 17, 18, 19, 20, 21 or 22, wherein the operating part has an operating lever operably attached to the transferred object supporter and a floating engaging member capable of engaging with the pinion following the operation of the operating lever,

a rack part engaged with the pinion, which is capable of rotating the backing face of the auxiliary roller in the counter-transfer direction is formed at the floating engaging member, and

a releasing mechanism separates, in the normal use state, the rack part from the pinion so as not to contact against with each other.

24. A transfer tool as state in claim 23, wherein the releasing mechanism is configured so as to switch the floating engaging member from the engaging attitude in which the pinion engages with the rack part to the releasing attitude in which the pinion is separated from the rack part with the operation of the operating lever.

25. A transfer tool as state in claim 24, wherein the releasing mechanism is configured so as to bring the floating engaging member into the releasing attitude in the vicinity of a rotating end edge in a rotating range of the operating lever.

26. A transfer tool as state in claim 23, 24 or 25, wherein an elastic member for accumulating an elastic repulsive force in the reverse direction when the operating lever is rotated is attached to the operating lever.

27. A transfer tool as state in claim 25 or 26, wherein the releasing mechanism has a floating engaging member supporting mechanism capable of movably supporting the floating engaging member so as to take the engaging attitude or the releasing attitude and an operating force converting mechanism for converting the rotating operation of the operating lever into a retreating operation from the engaging attitude to the

releasing attitude.

28. A transfer tool as state in claim 27, wherein the floating engaging member supporting mechanism has a supporting shaft which is formed at one of the operating lever and the floating engaging member and supports the floating engaging member and an attitude switching part which is formed at the other of the operating lever and the floating engaging member and movably supports the supporting shaft so that the floating engaging member may take the engaging attitude and the releasing attitude.

29. A transfer tool as state in claim 27 or 28, wherein the floating engaging member supporting mechanism has an elastic deforming part for accumulating a repulsive force returning the floating engaging member to the engaging attitude when the floating engaging member takes the releasing attitude.

30. A transfer tool as state in claim 27, 28 or 29, wherein the operating force converting mechanism has a cam face provided at one of the transferred object supporter and the floating engaging member, and an urging part which is provided at the other of the transferred object supporter and the floating engaging member and can slidingly contact against the cam face.

31. A transfer tool as state in claim 30, wherein the

cam face is formed on the upper face of the floating engaging member and the urging part is provided at a position opposed to the cam face on the lower face of the transferred object supporter.

32. A transfer tool as state in claim 30 or 31, wherein a positioning part for coming into contact with the urging part to position the floating engaging member in the releasing attitude when the operating lever is located at the rotating end edge is formed at the cam face.

33. A transfer tool used when a transferring object is transferred on a transferred object such as a paper comprising at least a transfer tool main unit having a transfer head capable of bringing the transferring object into contact with the transferred object and a transferred object supporter capable of contacting against the transferred object from a back face corresponding to a contact area with the transfer head of transferred object in the state where the transfer head contacts against the transferred object, wherein

the transfer head is configured so as to have a transfer face which comes into contact with the transferred object and on which the transferring object is transferred at the transfer of the transferring object on the transferred object and transfer the transferring object on the transferred object by bringing

the transfer face into contact with the transferred object and moving the transfer face in a predetermined transfer direction,

an inserting space into which the transferred object is inserted is formed between the transferred object supporter and the transfer tool main unit and the transfer head is disposed in the inserting space so that at least the transfer face is exposed from the transfer tool main unit, and

a feeding mechanism for feeding the transferring object to the transferred object by a certain dimension through the transfer face in the state where the transfer face is stopped and pressed with respect to the transferred object.